A Different Set of Classrooms: Preparing a New Generation of Clinicians

Catherine A. Jackson and Janice D. Woolsey

Catherine A. Jackson, Associate Professor, California State University Northridge
Janice D. Woolsey, Coordinator, Language, Speech and Hearing Center, California State University Northridge

Abstract

Educating the Millennial generation, a cohort of students accustomed to rapid transmission of ideas in the digital age, has necessitated changes in traditional educational and clinical training techniques. Four innovations in curriculum and instruction are discussed which capitalize on the skills of this generational group. These are: 1) introduction of online learning activities linking current literature to clinical observation and analysis; 2) use of peer mentoring in clinical education; 3) increasing use of problem-based learning activities, and 4) implementation of a educational tools which are delivered outside of a traditional classroom format (e.g. a new clinician "Boot Camp"). The importance of tailoring learning activities to the skills and expectations of clinicians, faculty and community supervisors is reviewed as it relates to these changes in clinical preparation for speech-language pathologists.

Introduction

Like all students before them, the Millennial generation, those students born in the late 1980s or early 1990s, bring as a group the beliefs and attitudes associated with their generational cohort (Coomes and DeBard, 2004). Millennials were taught self-esteem in schools, are often "only" children, and are described as demonstrating a lack of focus in their studies as well as having difficulty with acceptance of constructive criticism (Woolsey, 2008). They have been reported to work best within group learning activities (Howe and Strauss, 2000; Kimberly, 2009), and expect good grades in return for attending class and completing course readings (Roosevelt, 2009). Millennials also learn well when taught utilizing an "aha" or milieu teaching methodology borrowed from the early intervention literature, and appear to thrive in problem-based tasks where knowledge and preparation are tools to complete another, hopefully engrossing, task.

With these characteristics in mind, and with an eye towards how technology and learning "in real life" might facilitate changes in instruction, we discuss four innovations we have made in the academic and clinical training of students in speech-language pathology. Each change originated in the difficulties faculty encountered in a particular area of instruction and learning. Some of

these changes in clinician preparation have only begun to be implemented within our program, but all were adopted either to capitalize on the strengths of the Millennials or to combat perceived weaknesses observed in the skills of current students.

Utilizing technology: The online clinic exercise assignments[1]

A widely reported characteristic of the Millennial generation is their dependence on technology. They are native users of computers, text messaging and the Internet. Their familiarity with electronically delivered information shapes their expectations about classrooms and the abilities of their professors to deliver information over the Internet, on demand, with up-to-the minute media enhancement. We have been able to utilize this Millennial trait in devising learning units delivered on demand from a university website. Further, we have utilized these online clinic assignments to integrate academic knowledge with developing clinical skills for an advanced graduate diagnostic class in communication disorders and sciences.

The advanced diagnostic course, as historically organized in our department, focused on a diagnostic case evaluated each week. Students in the course were completing their graduate coursework, and would shortly begin their clinical internships. The course was structured around principles inherent to Dowling's "Clinic Teaching Model" (2001). The two "in-room" clinicians completed the assessment, with other members of the student group helping to collect data, collaborating on data analysis, and providing feedback to the clinicians completing the actual assessment. Over time, however, the participation and collaboration on the part of the observing clinicians had appeared to decrease, somewhat surprising given that collaboration is often mentioned as an educational preference for the Millennials (e.g. Paul, 2001). Active and engaged participation is integral to the success of the Clinic Teaching Model, and is the basis for developing and evaluating clinical and supervision skills of the students within this approach to clinical education. It became apparent that the Clinic Teaching Model no longer functioned in an age when students were hesitant to critique their fellow students, preferring to provide emotional support for the efforts of the clinicians who had been interacting with potentially difficult clients. Millenials also had expectations about media as both instructional and observational tools, and

[1] Development of this project was partially supported by a Judge Julian Beck Learning-Centered Instructional Grant awarded to C. Jackson and P.J. Seymour, "Mastering clinical competencies by utilizing web-based technology" for 2008–2009; Center for Innovative and Engaged Learning Opportunities, California State University Northridge.

preferred to review recorded sessions rather than analyze data in real time. Finally, it became clear that students did not have sufficient grasp of the literature to apply theoretical constructs in their criticisms of events during the session.

To facilitate development of integration of clinical skills with academic knowledge, and to address the lack of critical analysis skills, clinical exercises were developed concerning topics related to assessment of speech and language disorders. Some of the topics of the exercises included choice of assessment procedures, issues related to evidence-based practice, and counseling techniques. In the clinic assignments, the students first read literature on a specific topic, and wrote brief summaries of the articles. Then, they watched a video of a previous peer-conducted diagnostic session which were relevant to issues discussed in the readings. Guided response sheets were used to evaluate behaviors of the participants in the video, and to formulate hypothetical feedback for the clinicians in the film. All materials were provided via the internet, with videos streamed from the course website. Clinicians were able to complete assignments as was convenient to their own schedule (another characteristic preference reported for this group; Kellum and Hale, 2007), and they were able to comfortably practice emerging supervisory skills without directly confronting fellow clinicians.

Eventually, we hoped the responses elicited in the exercises would generalize along a number of parameters. Initially, we wanted observations and analysis by graduate students to be increasingly based on knowledge of "best practice" as outlined in current scholarly work. We also wanted to provide clinicians with the beginnings of supervisory skills as practiced within a relatively safe domain. Finally, we hoped that the guided observations and the critical analysis used in the observations would lead to increased introspection and analysis of their own clinical skills.

The initial results from the use of the pilot exercise indicate that students are able to learn and apply the academic information to their analysis of the effectiveness of the clinician in the video they analyze. For example, the concept of "overplanning" (McCrea & Brasseur, 2003), a topic of one clinic exercise, has been adopted by the student clinicians as a necessary component of diagnostic preparation. We will continue implementing these exercises in the upcoming year,

hoping to facilitate the bridge between knowledge and practice in our graduate students, and collecting pre- and post-semester data to evaluate possible carryover of the analysis skills to self-analysis in the clinical setting.

Peer mentoring in clinical education

Mentoring is classically defined as a relationship between a more expert or senior individual and a less-educated or experienced individual, with the goal being to improve the education or career of the latter (Anderson and Shannon, 1988). However, mentoring occurs more often, at least in our department, in multiple directions (Seymour et al., 2008), with student-to-student mentoring being one of many possible teaching and learning relationships. We have utilized a peer-mentoring paradigm in a specific program to remediate poor performance by students in graduate internships.

While most students adapt and flourish in their clinical placement outside of the department, a few have demonstrated difficulty in accepting and incorporating the feedback provided by the on-site clinical supervisor. For these students, we have started a "remediation" program, in which peer supervision serves as the vehicle for teaching students how to provide and respond to feedback. In remediation, the student experiencing difficulty in their outside clinic placement returns to the university clinic, and proceeds through a structured three-step program. First, the clinician is instructed in basic principles of supervision, and in techniques for facilitating clinic learning for an inexperienced supervisee. Second, the clinician in remediation is paired with a beginning clinician, whom they (along with the instructor of record) observe and provide feedback to. It is in this second stage that the clinician undergoing "remediation" begins to realize the importance of an external point of view, the intention with which feedback is usually provided by a mentor, and the potential benefit of a supervisor's input. If this second stage is successful, and it has been to date, the graduate clinician is returned to an external clinical placement in the final step, with a different level of awareness of the benefits of a supervisor's input, and a willingness to integrate suggestions into clinical practice.

Aside from the successful remediation of the graduate clinician, an additional and unexpected outcome has become apparent: not only does the graduate clinician gain experience and perspective, but the beginning clinician comes to depend more on their peer mentor for feedback than the clinical faculty member designated as their supervisor of record. Further, other beginning clinicians ask for feedback and suggestions as they observe the benefits of the peer mentor relationship. We plan to continue use of peer mentoring for students with difficulty in their internship, and also plan to expand peer mentoring for students who are not experiencing any difficulty in their clinic setting, pairing students with peers to provide early exposure to mentoring and supervisory techniques.

Problem-based learning activities

Problem-based learning is a methodology conceived more than 30 years ago to improve the education of medical students. The methodology involves presenting students with problems to solve (e.g. diagnosing the illness of a hypothetical patient and determining an appropriate course of medical treatment). Students are responsible for generating hypotheses, doing research, and using their self-directed knowledge as a tool to solve the problem at hand. Importantly, this approach challenges students to think critically as they seek to understand a problem and evaluate solutions. The inherent appeal of problem-based learning lies in the practicality and immediacy of the task: knowledge is not just an abstract series of concepts to be learned for an examination, but is rather a valuable means to an end (Prince, 2004). While the task most often associated with problem-based learning is case analysis and presentation (e.g. Schmidt, 1983), the example presented here is an instructional task, used in an undergraduate anatomy and physiology of the speech mechanism.

The anatomy and physiology course is part of the academic core that is completed prior to any clinical coursework, and it is one of the first courses taken by undergraduate students entering the department. The American Speech-Language Hearing Association's standards for the educational preparation of students in speech-language pathology (2008) as well as the demands of any speech-language pathology practice require a working knowledge of the anatomy and physiology of the speech mechanism. However, student expectations regarding the academic

focus and workload of the course vary wildly, with many undergraduates unprepared for the academic rigor of the science-based course. Memorization of specific pictures and charts often takes the place of more conceptually based learning.

To facilitate student learning in this initial course, problem-based learning tasks have been implemented throughout the syllabus. One example of this task is the instructional task assigned during the unit on neck and facial muscles. Students must prepare to teach their fellow students about structure and function of a particular muscle. In this task, they must first provide a visual aid for their fellow students by forming a given muscle using modeling clay on an inexpensive model of the human skull. They then describe the function and attributes of the muscle, utilizing their visual representation. They are told that they should prepare to teach a number of muscles, as they may not replicate a muscle that another student has taught. They are also to be ready to answer questions from fellow students concerning the physiology of the muscle, and to clearly represent a muscle's size and shape as they form it for others to see.

Student responses to this type of task have been consistently positive. They intuitively understand that they are not memorizing an arbitrary origin and insertion of a muscle; rather, they are preparing to form the muscle fibers with attachments at the appropriate point on the human anatomy as they present their lesson. Physically forming the muscle fibers helps them to predict possible functions of those fibers. Teaching their peers forces each student to not just memorize a definition, but to prepare to explain the concept at hand. In short, the textbook and lecture information are not obstacles to be endured, but are instead resources for solving a problem. Passive memorization of the text must be replaced with understanding of function and form of structures related to speech production. This shift in perspective, it is hoped, makes the course itself more relevant toas students bring knowledge about anatomy to coursework about disorders, and eventually to the clinic.

Using a "new set of classrooms"

The final pedagogical change described here was motivated by a tendency by undergraduate students to "learn and forget" material from their coursework. In many cases, the students wanted only to learn enough verbatim information to succeed on the final examination for a

course, without understanding how work in one course related to any other. Any information retained after an examination was understood primarily within the context of the single course in which it was learned, without integrating material all courses by topic, theme or concept. Additionally, as noted in Wilson (2002), students appear baffled when asked to apply their academic course knowledge to the clinical problems of the child or adult in front of them. Our off-campus clinical supervisors have also noted that our students are sometimes unable to grasp "the big picture" when devising assessment plans, as well as lack of experience in generating practical solutions to the treatment of the communication problems of their clients.

With these difficulties in mind, Clinical Boot Camp came to fruition. It was designed to bridge the gap between a student's theoretical knowledge of disorders and the very real needs of the client sitting in front of the clinician in a therapy room. Boot Camp was designed to take advantage of the learning characteristics of the Millennials, some of which have been mentioned earlier; a preference for group learning activities, and improved performance during practical, problem-based learning tasks. Clinical Boot Camp, now in its fifth year, provides the students an opportunity to participate in hands-on workshops led by speech-language pathologists and other professionals practicing in the field. The students learn by doing in the company of their peers, whether it is correcting a lateral lisp using tried and true techniques with a drinking straw, or mixing liquids to the proper semi-thickened or thickened consistency for swallowing assessments they will conduct on each other. *Highlights Magazine for Children* says it best on the cover of every issue: "Fun with a Purpose". That motto truly defines this generation of learners, and embodies the philosophy of our Boot Camp.

A typical Boot Camp schedule includes lessons for students at all levels of clinical training, and provides experiences relevant to a variety of educational and medical settings. Some of the past workshops for clinicians working with preschool-aged children have included "Play with your Food", designed to teach student clinicians how food-based activities can be used to facilitate production of early vocabulary items. Floor-based therapy techniques are always popular at Boot Camp, with our student clinicians sitting on the floor and playing with toys designed to elicit early sounds in children. For older children in therapy who may need help with more sophisticated language structures or articulation disorders, our Boot Camp workshops have

addressed specific remediation hierarchies for /s/ or auxiliary verbs. The students experience first-hand techniques for assessment or therapy on themselves and others, and have learned the pitfalls of the various therapy techniques. The valuable experiences of in-the–trenches therapists, who have been able to demonstrate what works and what does not, allows the students to create a toolbox of techniques they can carry with them throughout their careers. The experiential learning clarifies the strengths and weakness of the clinical methodology in ways that reading about it (or even passively observing it) cannot.

Our hospital-based presenters also have provided a wealth of information to our Boot-Campers on how to diagnose and treat the disorders found in acute care and rehabilitation facilities. The typical graduate student receives academic training in the area of neurologically based disorders, and as much practical clinical training as is possible before being assigned to an internship training site. Boot Camp provides an additional training opportunity in which many students can be reached at the same time. Our Boot Camp presenters have provided students with hands-on practice at using computers to train anomic patients in word-finding exercises and generalization, in bedside swallow evaluations on one another, and how to develop individual and group activities for aphasic patients who need better functional communication skills. Additional presentations in Boot Camp have addressed some specialty areas, and provided a forum for students to hear from experts outside of their current professors. *The Rancho Los Amigos Levels of Cognitive Functioning* were presented by the original author (Hagen, 1998), providing the students a rare opportunity to ask questions of the originator of this assessment tool.

In summary, Boot Camp has provided students with another learning modality: one that includes a light-hearted, group-participation element not usually found in the classroom. There are not usually notes taken in Boot Camp, because the students are too busy actually doing the activity at hand, and doing it repeatedly. While faculty are satisfied that students are acquiring valuable skills before their off-campus clinical placement, the Millennial students benefit from a chance to learn from experts the skills that they will need as they prepare to leave the university.

Summary

The general trend in the instructional changes outlined here, whether they serve to enhance learning in an undergraduate academic course, or to facilitate development of clinical skills, is to increase the engagement of students who may have learning preferences very different from those of their instructors. Problem-based learning, participation in workshop-type learning activities, peer mentoring and teaching, and increased use of technology in novel classroom assignments have all been added within the existing framework of our existing curriculum. We encourage those preparing teachers, therapists and clinicians to utilize these and other techniques for engaging their students and facilitating student learning.

Working with the Millennials, we cannot help but notice certain corresponding changes in our own learning patterns as instructors. When faced with a novel task, such as learning how to post online video samples, we prefer to learn by doing, with help from an "in-the-field" expert as needed. Problem-based learning is much preferred to taking a traditional class, which may or may not address our specific questions and the difficulties at hand. Our own experience in preparing a new generation of clinicians has shown us that the Millennials are not alone in wanting education that is immediate, relevant, and which helps us to solve a particular pedagogical problem. Thus, we agree with Bonfiglio (2008), who notes that generational labeling, including characterization of the Millennials, may not be the most accurate method for determining learning preferences for students of any sort. The most effective response to any group of students might be to simply to embrace the diverse possibilities for challenging them to learn.

References

American Speech-Language Hearing Association. 2008 Standards and Implementation Procedures for the Certificate of Clinical Competence in Speech-Language Pathology. http://www.asha.org/about/membership-certification/handbooks/slp/slp_standards.htm (accessed March 10, 2009).

Amster, Barbara J. 2008. Problem-based learning in fluency and stuttering. *Perspectives on Fluency and Fluency Disorders 18* 43-46 March 2008. doi:10.1044/ffd18.1.43, http://div4perspectives.asha.org/cgi/reprint/18/1/43 (accessed March 3, 2008).

Anderson, Eugene M. and Shannon, Ann L. 1988. Towards a conceptualization of mentoring. *Journal of Teacher Education*, *39*(1), 38 – 42.

Bonfiglio, Robert. A. 2008. Shorthand or shortsightedness? The downside of generational

labeling. *About Campus*, *13(3)*, 30 – 32. DOI 10.1002/abc.256, http://www3.interscience.wiley.com (accessed March 2, 2009).
Coomes, Michael D. and DeBard, Robert. (Eds). 2004. Serving the Millennial Generation. *New Directions for Student Services*, *106*, (Summer).
Dowling, Susann. 2001. *Supervision: Strategies for successful outcomes and productivity*. Boston: Allyn and Bacon.
Hagen, Chris. 1998. *The Rancho Levels of Cognitive Functioning*. Third Edition.
Howe, Neil and Strauss, William. 2000. *Millennials Rising: The Next Great Generation.* Random House, New York.
Kellum, Gloria D. and Hale, Sue T. 2007. E-Learning: educating the 21st century speech-language pathologist. *The ASHA Leader, 12*(14), October 16, 24-25.
Kendler, Barry S., and Grove, Patricia A. 2004. Problem-based learning in the biology curriculum *The American Biology Teacher*, *66* (5), 348-354. Retrieved 3/1/09 from: http://www.jstor.org/stable/4451688.
Kimberly, James. 2009. Are you ready for the next generation of workers? New *Hampshire Business Review*, *31*(1*)*: 18.
McCrea, Elizabeth S., & Brasseur, Judith A. 2003. *The supervisory process in speech-language pathology and audiology*. Boston: Allyn and Bacon
Paul, Pamela. 2001. Getting inside Generation Y. *American Demographics*, *23(9)*, 42-49.
Prince, Michael. 2004. Does active learning work? A review of the research. *Journal of Engineering Education, 93*(3), 223-231.
Roosevelt, Max. 2009. "Student expectations seen as causing grade disputes." *The New York Times*, February 17, Education section, Online edition. http://www.nytimes.com/2009/02/18/education/18college.html?_r=1&scp=1&sq=student%20expectations%20disputes&st=cse (accessed March 2, 2009).
Schmidt, Henk G. 1983. Problem-based learning: Rational and description. *Medical Education*, *17*, 11 – 16.
Seymour, Patricia J., Jackson, Catherine A., Sinclair, J. Stephen., Weber, Elizabeth G. and Wilding, Marissa K. 2008. Mentoring in all directions: Influence and focus throughout the department. *Perspectives in Speech-Language Pathology: Issues in Higher Education*, *11,* 48 – 55. Doi:10.1044/ihe11.2.48. http://div10perspective.asha.org/cgi/content/full/11/2/48 (accessed October 15, 2008)
Wilson, Howard F. 2002. Gifts from the Web: Problem-based learning. *Perspectives in Speech-Language Pathology: Issues in Higher Education*, *5*, 5 – 8.
Woolsey, Janice D. 2008. Clinical supervision: Making space for new tools in our toolbox. *CSHA Magazin*e, *38* (2), 11 – 14.

Published by the Forum on Public Policy